



Guns into Butter!

"WE are heading for a world shortage of food," warned Lord Woolton. And long-sighted investors are putting their spare cash into fertilisers, for which there will be an expanded demand in order to put neglected and over-worked land in good heart.

Hundreds of these investors will be interested, for very good reasons, in all the H.E. remaining in stock after the war.

The last war ended with about 1,000,000 tons of ammunition in hand. The expense of removing hundreds of dumps to a central disposal point proved so costly that break-up plants had to be built on the sites. In the end, converted into scrap metal, the mountains of shells and bombs fetched the Government a paltry million pounds or so.

That was better than nothing, but, nobody being able to think of any use for the explosives and propellants which had been extracted, these were prodigally piled on the beaches of France and Belgium, and burned.

High explosive which had cost us £100 a ton simply went up in smoke. There will be a good deal more this time, and it will be worse than criminal to waste it.

But with our widely increased technical knowledge and aversion from waste, this will not be necessary.

The basis of all H.E. is nitrogen. Some explosives contain potash as well. Both are excellent land fertilisers, and, fortunately, the elements in explosives are held together very lightly.

It requires very little to separate them so that they can be used to form other combinations. Thus, extraction would need no complicated machinery; it could be carried out in simple plants easily adapted from those already in being in the factories.

That makes a happy post-war prospect—no waste, and thousands of tons of valuable fertiliser at hand.

The present fertiliser position is not so rosy. Between them, German and French mines produce nearly five-sixths of all the potash in the world.

Until the 1914-18 war all the world obtained its potash from the huge Stassfurt mines in Germany. Then other sources had to be found. The United States discovered natural deposits in her own West, France found them in Alsace, while Britain eked out meagre supplies from flue dust and industrial waste.

To some extent the loss of foreign supplies cut off by the present war has been made good by the reopening of the French North African market.

But it is from the Dead Sea that we receive a substantial part of our potash imports. Now that the Mediterranean sea route is again in operation, the Palestine Potash Company is booming as never before.

Virtually all its supplies come from the Dead Sea, the water in which contains 24 per cent. of salt, and is so buoyant that you can float on its surface without effort.

With the help of the sun, which does nearly half the work, about 100,000 tons of valuable potassium salts are evaporated yearly for Britain from the thick, heavy waters of this large inland sea, on whose bank, beside a rock of pure salt, stands a pillar which is reputed to be the remains of Lot's wife.

Another primary component of fertiliser is, as we said, nitrogen—or, in its "fixed" form, nitrates. All growing plants need it, only the leguminous family (beans and peas) being able to absorb it from the air.

The rest—corn, green vegetables, and all the other staple vegetable foods—must therefore have it applied in the form of nitrates. And these, for the most part, are imported from Chile, where the extraction of nitrates from saltpetre is a vast industry.

It was discovered accidentally by a native priest, who, throwing a chunk into his garden, found that his plants grew much better than before.

A British naval officer carried the good news to Europe,

and it wasn't long before the nitrate extracts were being shipped not only to Europe, but all over the world.

It is in a purified form that nitrates are used in the making of gunpowder. Ammonal, for instance, consists largely of ammonium nitrate. And nearly all other explosives contain it in greater or less degree.

Our agricultural land—overworked, pushed constantly to peak production point—will be in sore need of resuscitation after hostilities cease. Valuable time and much expense will be saved, and the fertility of our worked-out farms immeasurably restored by using the fertiliser that will undoubtedly be extracted from the huge quantities of H.E. that will be going begging when the Cease Fire sounds.

Send your—
Stories, Jokes
and Ideas
to the Editor

L/Tel. WALTER
ARCHER—

NEWS AND PHOTOS FOR YOU

IN the quaint little house on the windblown hill lives a slim, frail-looking woman whose war work requires the strength of a sturdy male labourer.

She's just a "little old lady," but she's a woman whom any submariner—old or young, rich or poor—would be proud to have for a mother.

And there's little doubt that you, Leading Telegraphist Walter Archer, are proud to be her son.

Few 22-year-old sailor-lads can boast of a 48-year-old mother who is a member of a team of female yard labourers at a Crewe (Cheshire) railway engineering stores—14 married women who now wield the heavy shovels which the men laid down when they went to war.

The house on the hill is No. 6 Whitehill, Kidsgrove, near Stoke-on-Trent—the stone-built cottage where your mother does the washing and the ironing after her day at the railway yard. The place, too, where you go home on leave, Walter.

In the morning Mrs. Nellie Archer rises at 5.30, has her breakfast, and feeds the dog and the cat.

And then, as the mists of morning rise over the heathland, begins her mile-long walk down the steep winding road—the same bleak, uphill climb which she does after loading wagons and handling railway sleepers.

At the nearest station she catches a train for Crewe—about ten miles away.

She does a man's overalls for a man's job. She loads and unloads wagons. She shovels coke and cement, stacks bricks and railway sleepers. And this for nine hours a day, five days a week.

These were her simple, unpretentious words when we called at the house on the hill: "I hadn't done hard



work like that before, but I saw that they were advertising for young women for the job when the men went away.

"At the time it was a passing fancy that I'd like to do that work. I felt sure I could do a man's job to help the war effort."

You'll be wondering, Walter, about the cat in the picture. That, too, is part of the story.

You haven't yet seen Ginger the cat. He was one of the kittens born to the railway yard's cat. His mother was killed in the railway points before Ginger could see.

So Mrs. Archer gave him a home at her own hearth, and he's made a firm friend of your dog Toby.

Your mother gives you this message:

"All my love, my boy. I'll be seeing you!"
And, Good Hunting!

WHERE'S YOUR MEMORY—

BOY?

Asks Ronald
GARTH

HARRY (ADDING MACHINE) CASH, the human tote, was recently in town. One of those amazing people who can tell you in a flash that there are 1,734,480,000 seconds in 55 years—less Leap Years!—or mention, without thinking, that August 1st this year falls on a Tuesday.

We've all heard of similar prodigies with astounding powers of calculation or memory—men like Joe Sceliger, who learned all the works of Homer by heart in three weeks; or Sunderasan, the Indian, who can memorise thirty groups of three figures, arranged in a chance order, and pick out any group on request.

How do they do it, these human adding machines? "Memory" Woodfall, a famous Parliamentary reporter, was able to listen to a seven-hour debate without writing a note—and could then write up all the proceedings from memory, filling 15 news columns without a mistake. Peter Petrovitch, a young Serbian, who has astonished the savants, is able to memorise a number of over 80 figures and repeat it accurately within ten minutes.

Try it yourself! In this article so far there have been six names. One of them was Homer. What were the other five? And, without reflecting, can you even say how many days remain before the end of next month?

Yet it's child's play. An American schoolboy, Billy Sidis, could perform any calculation in his head—and at the age of 11 actually lectured a class of Harvard professors on the fourth dimension.

They didn't believe some of his statements at the time, but

worked it out, years later, that he had been right.

And another amazing child, seven-year-old Zerah Kolburn, could give without hesitation the square root of such figures as 106,929 or the cube root of 268,336,125.

"Give the factors of 36,083," he was asked. He immediately replied that the figure had none, which, in fact, is the case. Yet the queer fact remains that Zerah was apt to give the wrong answer when asked to number his questioner's fingers or toes. Because he had more than the usual number himself, he imagined that his questioner had the same.

Then there is the inexplicable case of Michael Kaplowitt, whose mother was doing her housekeeping accounts when she murmured to herself, "I wonder what day May 16 falls on?"

Unhesitatingly, while playing on the floor, her six-year-old son told her. Able to tell the day of the week for any date, no matter how many years ahead, Michael knew the alphabet backwards at two years old and taught himself to read when only four.

Now he has a rival in Freddie Craig, a boy who can simultaneously read three newspapers upside-down and backwards while keeping up a steady conversation—and afterwards answer questions on anything he has read.

It makes you feel weak, doesn't it? Yet these super-brains are not always successful when it comes to grappling with the hard facts of life.

After his Harvard lecture, Billy Sidis—remember see—

ing his name earlier in this article?—turned to writing as a career, but found every subject to be petty. Then he tried to lecture, but found the work futile against the limitations of the human mind.

When last heard of he was running an adding machine for an accountancy firm. Harry Cash became a stockbroker's assistant, but made a success of life only when he abandoned his head for mathematical figures—and went in for dress designing!

Then there is Helmut Ossig, who, like Datas, could accurately name the date of almost any historical event. He toured Europe demonstrating his mind-power for a time, but in the end found it troublesome to memorise time-tables and catch trains.

So he learned the contents of a telephone directory of 600,000 names in order to get a job, and settled down as a permanent "directory enquiry" to the City of Breslau.

No doubt he is still there, the R.A.F. permitting. Or is he finding it tough going these days, sorting out the enquiries of irate subscribers who must be getting quite a lot of wrong numbers?



To-day's Brains Trust

A PHYSICIST, a Philosopher, a Composer and an Architect discuss:—

How is noise measured? We hear a lot about "phons" and "decibels," but are never told the difference between them. How do we know a "phon" when we hear one? What do these terms mean?

Physicist: "Originally the intensity of a sound was measured in units called 'decibels' in America and 'phons' in Germany, and this caused some confusion, particularly as the units were not quite the same in both cases. Further confusion arose through the assumption that the intensity of a sound is the same thing as its loudness. It was finally agreed to use the term 'decibel' for the unit of intensity, and

'phon' for the unit of loudness."

Philosopher: "I understand that the intensity of a sound is objective, while the loudness is subjective. That is, the intensity can be measured by instruments, according to the amount of energy employed in producing the sound, but the loudness refers to its effect on human ears, and may vary considerably with different people."

A sound of enormous and undisputed intensity might, to a deaf person, have no loudness at all."

Physicist: "There is admittedly a difficulty there. But the surprising thing is that people who are not deaf are very much in agreement as to the smallest differences in loudness which they can detect, and it is this average 'smallest detectable difference' in loudness which is adopted as the unit of loudness—the phon."

"In order to increase a sound by one phon, it is generally necessary to increase the energy producing it by about 25 per cent."

Composer: "I can see that, but I should have thought it only applied to the same sort of sound. I mean, some sounds

would be increased by one phon with less than a 25 per cent. increase of energy, and others would require more. It must be extremely difficult to compare the loudness of, say, a piano with that of a passing steam-roller."

Physicist: "Well, there is a sort of standard sound with which all other sounds and noises are compared. This is a pure tone of 1,000 vibrations per second, and is approximately equal to a note two octaves above 'middle C' on a piano."

"This note can be produced in a suitable instrument, and increased in loudness till it just drowns the noise to be measured. The energy employed to make the necessary increase gives two sorts of information. It gives the number of decibels which the standard tone had to be raised to drown the noise, and the loudness of the noise in phons."

Architect: "As a designer of concert-halls, I have always been interested in noise-measurement, and have had tests made on various occasions to determine the loudness of music in different parts of an auditorium, and the loud-

ness of traffic noises invading the hall from outside."

"As far as I remember, the average noise in a quiet London street is about 40 phons, that of a conversation 60 phons, a busy street 75 phons, a road-drill 100 phons."

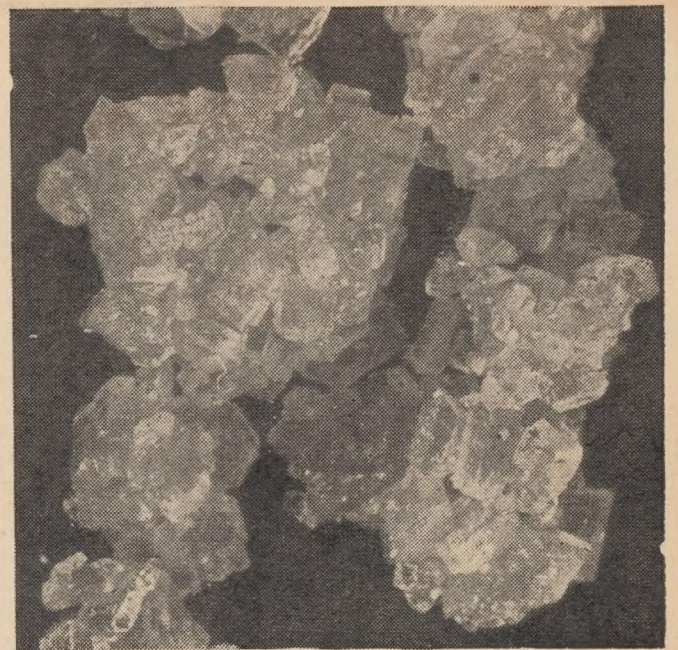
But the intensities of these various noises—that is, their number of 'decibels'—is different from their 'phons' in each case, because they are different sorts of noises. Thus, the energy of the sound in a quiet street is 30 decibels, a conversation is 50 decibels, a busy street 60 decibels, and a road-drill 95 decibels. But I should very much like to be informed what is the actual energy in a single decibel."

Physicist: "I can tell you that. It is the air-pressure on the ear-drum due to the sound-wave of the standard tone when it is just audible. Audibility varies with different ears, so it has been fixed (in this country and America) at .0002 dynes. This represents a sound of 0 decibels."

"The increase in energy required to go up the scale of 1, 2, 3, 4 decibels, etc., follows a mathematical law which we cannot go into. I may add that the scales of phons and decibels are the same for the standard tone, but vary for all other tones and noises."

Philosopher: "This distinction between phons and decibels is very elusive. Let me attempt to put it in one sentence. Two sounds of different kinds have the same loudness (in phons) when they sound equally loud to the ear, but different quantities of energy will be required to produce this effect, and so their intensities (in decibels) will be different. Is that right?"

TO-DAY'S PICTURE QUIZ



WHAT IS IT?

Answer to Picture Quiz in No. 257: Soda Crystals.

QUIZ for today

1. A curricule is a dance, Indian sauce, primitive boat, carriage, priest's robe?
2. Who wrote (a) The Bridge of Sighs, (b) The Bridge Builders?
3. Which of these is an intruder, and why? G. B. Shaw, Stalin, Winston Churchill, Anthony Eden, Maisky?
4. What was the name of Rip Van Winkle's dog?
5. When were Greetings Telegrams first introduced?
6. How many "sixes" are there in a set of dominoes?
7. Which of the following are mis-spelt: Shibboleth, Stereograph, Shuttelcock, Southron, Scavenger?
8. What is the largest province of Canada?
9. What year followed B.C.1?
10. About how tall is an ostrich?
11. What is the capital of Yugo-Slavia?
12. Complete the phrases: (a) Sturm und —, (b) Blut und —.

Answers to Quiz in No. 257

1. Water diviner.
2. (a) R. S. Surtees, (b) John Masfield.
3. Machinery has no "k" in it; all the others have.
4. Supina.
5. Southampton, Northampton, Littlehampton, Okenampton, Roehampton, Corhampton, Minchinhampton, etc.
6. His Master's Voice.
7. Laryngitis, Liqueur.
8. Cribbage.
9. Only bees, leeches and silkworms.
10. Female.
11. Oslo.
12. (a) By the horns, (b) With the smooth.

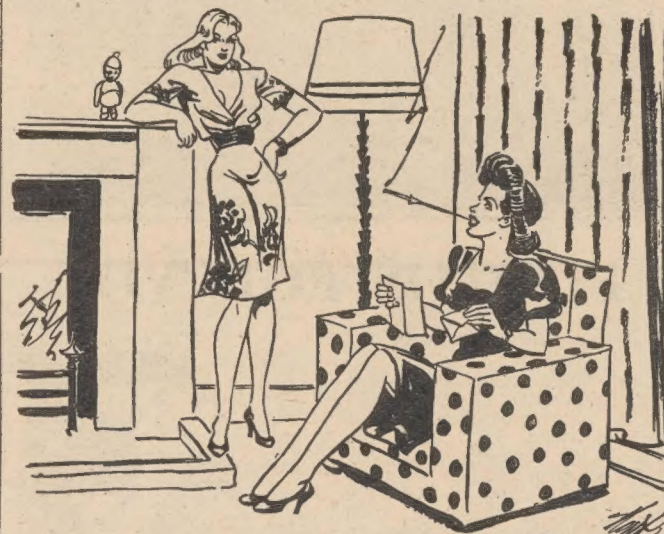
ROUND THE WORLD

with our Roving Cameraman



A MAORI BEAUTY.

Ain't she sweet? Her necklace is of wood, beautifully carved, the walls of her sleeping hut are of reeds, her flax skirt is woven by herself, and dyed many colours and hues. Volcanic mud is one of the chief dyes used. The design of her bodice and skirt is pure Maori. She has no make-up, and doesn't need any. Her address? All right, here it is—somewhere in New Zealand. Her name? We can give you that, too. Lena, she is called. She hasn't any troubles, so don't start any.



"Won't George be pleased! He always was one for gardening, and they've put him in the glass-house!"

Regret is a woman's natural food, Mr. Phenyl—she thrives upon it.
Sir Arthur Pinero.

WANGLING WORDS—213

1. Put a backbone in MARY, and make a piece of mechanism.
2. Rearrange the letters of LOCO ROAD, and make an American state.
3. Altering one letter at a time, and making a new word with each alteration, change: FIVE into QUID, DEAR into FREE, PLUG into GULP, FISH into POND.
4. How many 4-letter and 5-letter words can you make from METAPHYSICS?

Answers to Wangling Words—No. 212

1. PENDANT.
2. MANITOBA.
3. WOLF, WOLD, FOLD, FOOD, FOOT, SOOT, SLOT, SLOW, FLOW, HOME, HOLE, BOLE, BILE, BIDE, SIDE, HARE, HALE, HALL, TALL, TELL, BELL, LIAR, LIER, LIES, PIES, PIER, PEER, PEEL, FEEL, FELL, FALL, FAIL, RAIL.
4. Arch, Char, Cone, Road, Dear, Read, Head, Hone, Hear, Dean, Node, Done, Card, Care, Race, Rode, Dace, Corn, Darn, Horn, Cord, Core, Dore, Doer, Hoar, Hand, etc. Hoard, Roach, Reach, Chore, Coach, Crane, Chord, Conch, Ranch, Heard, Cared, Dance, Caned, Raced, etc.

CROSSWORD CORNER

CLUES ACROSS. 1 Arranged in columns.

1	2	3	4	5	6	7	8	9
10				11			12	
13			14		15			
	16			17		18		19
20			21		22			
		23				24		
25	26	27		28		29		
30			31		32		33	
34					35			
	36				37			
38							39	

CLUES DOWN.

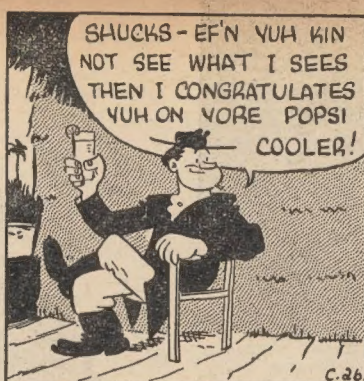
- 1 Surmount.
- 2 Swiftly.
- 3 Stoneless fruit.
- 4 Exceptionally.
- 5 Because.
- 6 Weed.
- 7 Corn spike.
- 8 Wish.
- 9 Further forward.
- 12 Archaic cows.
- 14 Tramp.
- 17 Unaffected.
- 19 Quick-sighted.
- 20 Fish.
- 22 Banter.
- 23 Against.
- 26 Ventilate.
- 27 Willing.
- 29 Backsliding.
- 31 Coin.
- 33 Mythical being.
- 35 Edge.
- 8 Be suitable.
- 10 Outspread.
- 11 Brandished.
- 13 Drive by heat.
- 15 Flag.
- 16 Sings low.
- 18 Nothing.
- 20 Set of notes.
- 21 Hitting.
- 23 Thin dress.
- 24 Printing.
- 25 Whittle.
- 26 Meat.
- 30 Penetrate.
- 32 Food.
- 34 Obliterate.
- 35 Requite.
- 36 Colour.
- 37 Outcome.
- 38 Organisation.
- 39 Extremity.

SHAFT SCREW
CALLOW HAC
ORGAN BATHE
LEEK BURTON
O BEFOG LEA
ORDERLIES
SPA TEENS O
OPINED SNOB
LOCUS SAUVE
SAT TURKEY
WELSH PEERS

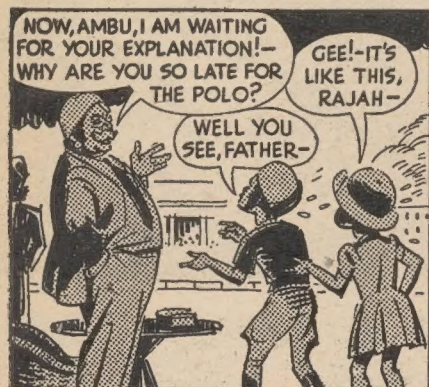
JANE



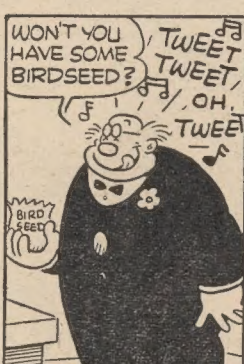
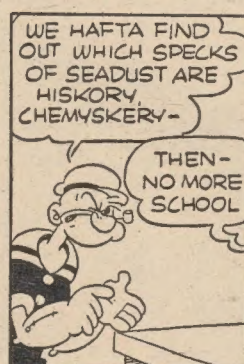
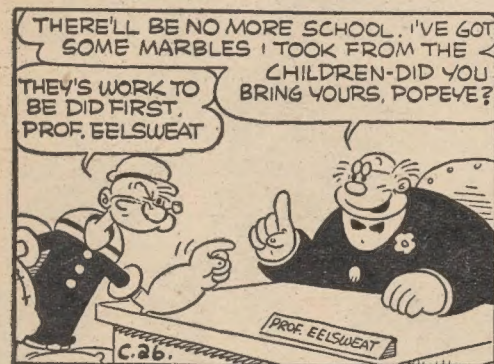
BEELZEBUB JONES



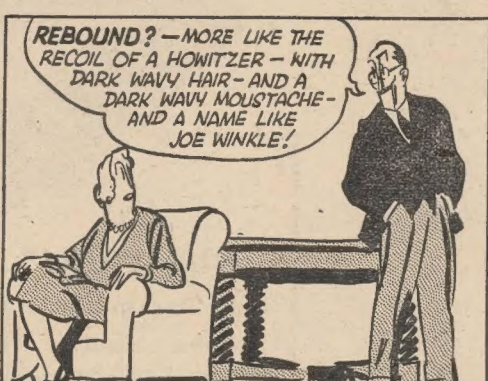
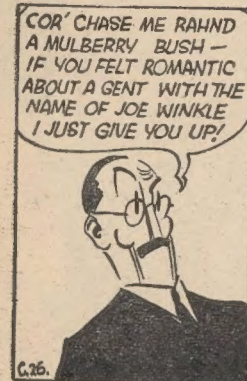
BELINDA



POPEYE



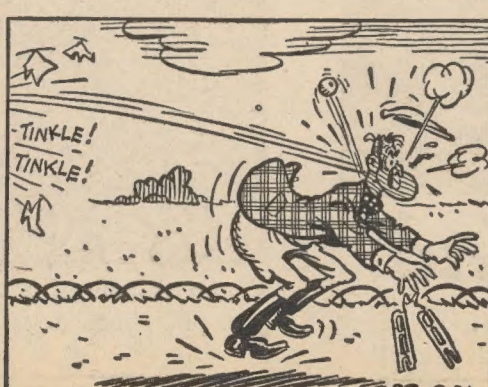
RUGGLES



GARTH



JUST JAKE



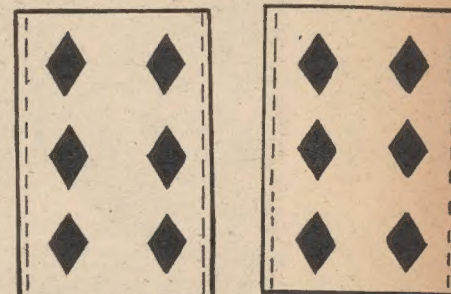
HOW'S TRICKS?

ASKS SID DE HEMPSY
THE WONDER PACK OF CARDS.

NO magician should be without this wonder pack, known among conjurers as the Biseaute Pack.

Not only can you do many amazing tricks with this wonderful pack, you can let the audience shuffle the cards, also you can use them to play any game of cards without fear of the secret being found out.

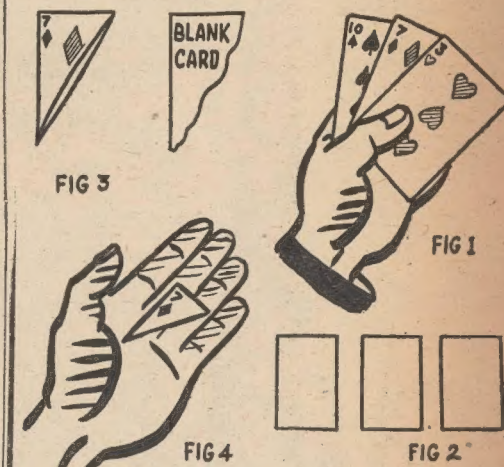
It's very easy to make one of these packs. First obtain a new pack of cards (not gold-edged ones). You now trim off the sides (see illustrations). What you do is to make one end a trifle narrower than the other end.



If you are doubtful as regards cutting the cards, take them to any printer's. He will be only too pleased to trim them for you for a few pence.

A spectator is requested to take any card. As the performer squares the cards up he turns them round. The chosen card is now placed into the pack. You now hand the pack to your assistant to shuffle. Request him to place the pack in his pocket.

The performer now places his hand into the pocket and produces the chosen card. All you have to do is to slide your fingers along the pack; gripping the wide end, you simply draw out the chosen card.



THIS is a very simple effect, and can be made quite easily. Also, it is very simple to work.

The effect is: Three cards are shown, namely, ten of Spades, seven of Diamonds, and the three of Hearts.

These are shown as in Fig. 1. Place them down upon the table (face downwards), as in Fig. 2. Invite a person to watch the centre card, namely, the seven of Diamonds. Performer now moves the cards about as in three-card trick.

"Now will you kindly pick out the seven of Diamonds?" Upon the person turning up the card he thinks is the seven, to his surprise the seven has disappeared, and in its place is a plain card.

Method.—In every good pack of cards you generally get a Joker and a plain card. Take the seven of Diamonds, cut the corner off, and make a little pocket (Fig. 3). This pocket is placed over the blank or Joker card. Joker card can be used instead of the plain card if desired.

You now hold them as in Fig. 1. As you place them down on the table you simply slip the corner off in your left palm.

The trick is now over as far as the performer is concerned. You will find that it makes a very fine pocket trick.

A NEAT DRAUGHTBOARD TRICK.

ARRANGE ten draughts in a row:—
1 2 3 4 5 6 7 8 9 10

The trick is to crown five kings by jumping one draught over two at every jump.

You may start at any draught, but you must jump over two, regardless of whether they are single or crowned.

Try and do it before reading the solution.
Solution.—First move No. 4 to No. 1, crown; 6 to 9, crown; 8 to 3, crown; 2 to 7, crown; 10 to 5, crown.
You will now have 1, 3, 5, 7, 8, 9 crowned. Show your friends very slowly, and I can guarantee they will always get mixed up, although there are only five moves.

Good Morning

All communications to be addressed to: "Good Morning,"
C/o Press Division,
Admiralty,
London, S.W.1.



"As like as two peas in a pod," seems to be what this youngster is thinking—or is she wondering whether to eat just a few more, and risk it!



This England

The tall spire of Norwich Cathedral, under whose shadow lies the body of Nurse Cavell.

"Let's call it Pax. You may be a Chimp, but you're no chump."

"O.K. You may be but, boy oh boy, I adore your style of 'warfare'!"



ANY QUESTIONS?

Asks Paramount star Marsha Hunt. No "Broadside," boys, please.



When you put the cat amongst the pigeons there's trouble; but when you put these dogs in with the poultry, the trouble is for any fox who dares to intervene.

SHIP'S CAT SIGNS OFF

"A rear attack is indicated."

